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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,320	02/19/2004	Andrew C. Goris	100110178-1	6135

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EXAMINER

AGGARWAL, YOGESH K

ART UNIT	PAPER NUMBER
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2622

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/782,320	Applicant(s) GORIS ET AL.	
	Examiner Yogesh K. Aggarwal	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>08/26/2005</u> . | 6) <input type="checkbox"/> Other: ____. |

Specification

1. The disclosure is objected to because of the following informalities: Claims 16 and 17 should be dependent from claim 13.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 6, 7 and 8-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakata et al. (US Patent # 5,119,178).

[Claim 1]

Sakata teaches an imaging device (figure 1) with white balance adjustment, comprising:

image capture circuitry (image sensor 20) configured to produce captured image signals (col. 2 lines 15-26, col. 3 lines 50-57);

means for adjusting white balance in the captured image signals (col. 3 lines 50-57 teach that after the white balance is adjusted the lens cap is removed by the user, the image on the viewfinder is viewed by the user. It is noted that this image would inherently have the white balance that is adjusted in the step taught in col. 3 lines 25-49); and

means for adapting the means for adjusting white balance by calibrating a non-standard target image to a standard target image (col. 3 lines 25-48, figures 1-4);

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[Claim 6]

Sakata teaches wherein the means for adjusting white balance implements an algorithm that relates a primary image obtained from a standard calibration target to a field image obtained from a non-standard calibration target (col. 3 lines 25-49 teach an algorithm for varying the gain of the amplifiers 36 and 37 by equalizing the colors of the reference color chart to the color chart on the lens cap in order to adjust the white balance).

[Claim 7]

Sakata teaches wherein the non-standard calibration target is a camera lens cap 11 (col. 3 lines 58-65, figures 1-4).

[Claim 8]

Sakata teaches a method for adjusting white balance in an imaging device, the method comprising the steps of capturing image signals from a field image of a non-standard calibration target and a primary image of a standard calibration target to produce a captured field image and a captured primary image; relating the captured field image to the captured primary image to provide calibration for adjustment of white balance (col. 3 lines 25-57, figures 1-4); and adjusting white balance in the captured field image by applying the calibration (col. 3 lines 25-48, figures 1-4).

[Claims 9 and 10]

wherein the step of adjusting white balance comprises enabling an adjusted variable gain coefficient on a variable gain amplifier and the step of enabling an adjusted variable gain coefficient comprises calculating a relationship between a variable gain coefficient for the field image and a variable gain coefficient for the primary image (col. 3 lines 25-49 teach an

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algorithm for varying the gain of the amplifiers 36 and 37 for equalizing the colors of the reference color chart to the color chart on the lens cap in order to adjust the white balance).

[Claim 11]

Sakata teaches wherein the step of calculating includes determining at least one variable gain coefficient for the primary image (col. 3 lines 25-32), changing the variable gain coefficient for the primary image to produce an adjusted variable gain coefficient (col. 3 lines 44-49), and supplying the adjusted variable gain coefficient to the means for adjusting white balance (col. 3 lines 50-57 teach that after the gains of the variable gain amplifier is adjusted the lens cap is removed by the user, the image on the viewfinder is viewed by the user. It is noted that this image would inherently have the white balance that is adjusted in the step taught in col. 3 lines 25-49). By varying the gains of the amplifiers to make the reference color chart equal to the field image of the lens cap color chart, the determination of gains in the primary and field image has to be determined. Therefore gains for both primary image and field are determined and based on that the gains of the amplifiers are varied to make the reference color chart equal to the field image of the lens cap color chart.

[Claim 12]

Sakata teaches wherein the non-standard calibration target is a camera lens cap 11 (col. 3 lines 58-65, figures 1-4).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakata et al. (US Patent # 5,119,178) in view of Applicant's admitted prior art.

[Claim 2]

Sakata also teaches that a photosensor is a photodiode (col. 1 lines 12-14) but fails to teach wherein the photodiodes are CMOS devices. However Applicant's admitted prior art teaches wherein CMOS devices are used as a photodiodes.

Therefore taking the combined teachings of Sakata and Applicant's admitted prior art, it would be obvious to one skilled in the art at the time of the invention to have been motivated to have CMOS devices to be used as photodetectors in order to integrate image sensor and camera electronics onto a single chip, low power dissipation due to the inherently lower CMOS process voltage, and significantly-lower manufacturing costs.

[Claim 3]

Sakata teaches wherein the means for adjusting white balance include signal processing circuitry capable of changing variable gain coefficients (col. 3 lines 44-48). Sakata also teaches that a photosensor is a photodiode (col. 1 lines 12-14). However Applicant's admitted prior art teaches wherein CMOS devices are used as a photodiodes.

[Claim 4]

Sakata teaches wherein the means for adapting the means for adjusting comprises an algorithm for relating a field image of a non-standard target to a primary image of a standard target (col. 3 lines 25-49 teach an algorithm for varying the gain of the amplifiers 36 and 37 for equalizing the

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colors of the reference color chart to the color chart on the lens cap in order to adjust the white balance).

[Claim 5]

Sakata teaches wherein the algorithm is operable for determining at least one variable gain coefficient for the primary image (col. 3 lines 25-32), changing the variable gain coefficient for the primary image to produce an adjusted variable gain coefficient (col. 3 lines 44-49), and supplying the adjusted variable gain coefficient to the means for adjusting white balance (col. 3 lines 50-57 teach that after the gains of the variable gain amplifier is adjusted the lens cap is removed by the user, the image on the viewfinder is viewed by the user. It is noted that this image would inherently have the white balance that is adjusted in the step taught in col. 3 lines 25-49). By varying the gains of the amplifiers to make the reference color chart equal to the field image of the lens cap color chart, the determination of gains in the primary and field image has to be determined. Therefore gains for both primary image and field are determined and based on that the gains of the amplifiers are varied to make the reference color chart equal to the field image of the lens cap color chart.

6. Claims 13, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakata et al. (US Patent # 5,119,178) in view of Takeuchi (US PG-PUB # 20030112342).

[Claim 13]

Sakata teaches image capture circuitry configured to produce captured image signals;

a primary image of a standard target useful for calibrating white balance adjustment (col. 3 lines 25-44 wherein the standard target is Y' , $(R-Y)'$ and $(B-Y)'$)

a secondary image of a non-standard target useful for calibrating white balance adjustment col. 3 lines 25-44 wherein the non-standard target is Y, R-Y and B-Y of the color bar chart 14); and

white balance processing circuitry that adjusts white balance by relating the stored representation of the primary image to the stored representation of the secondary image (col. 3 lines 44-49). Sakata fails to teach storing primary and secondary images. However Takeuchi teaches a digital camera that stores the primary image d206 and reference image data d220 into the memories 250 and 270 (Paragraphs 86-90, figure 1).

Therefore taking the combined teachings of Sakata and Takeuchi, it would be obvious to one skilled in the art at the time of the invention to have been motivated to have stored primary and secondary images as taught in Takeuchi to be used in the system of Sakata in order to reduce the calculation burden on a reproduction device such as a PC that is connected to the camera (Paragraphs 104-105).

[Claim 16]

Sakata teaches wherein the white balance circuitry is operable for determining at least one variable gain coefficient for the primary image (col. 3 lines 25-32), changing the variable gain coefficient for the primary image to produce an adjusted variable gain coefficient (col. 3 lines 44-49), and supplying the adjusted variable gain coefficient to the means for adjusting white balance (col. 3 lines 50-57 teach that after the gains of the variable gain amplifier is adjusted the lens cap is removed by the user, the image on the viewfinder is viewed by the user. It is noted that this image would inherently have the white balance that is adjusted in the step taught in col. 3 lines 25-49). By varying the gains of the amplifiers to make the reference color chart equal to

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the field image of the lens cap color chart, the determination of gains in the primary and field image has to be determined. Therefore gains for both primary image and field are determined and based on that the gains of the amplifiers are varied to make the reference color chart equal to the field image of the lens cap color chart.

[Claim 17]

Sakata teaches wherein the white balance processing circuitry implements an empirical algorithm that relates a primary image obtained from a standard calibration target to a field image obtained from a non-standard calibration target (col. 3 lines 25-49 teach an algorithm for varying the gain of the amplifiers 36 and 37 by equalizing the colors of the reference color chart to the color chart on the lens cap in order to adjust the white balance).

7. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakata et al. (US Patent # 5,119,178), Takeuchi (US PG-PUB # 20030112342) and in further view of Applicant's admitted prior art.

[Claim 14]

Sakata in view of Takeuchi teaches that a photosensor is a photodiode (col. 1 lines 12-14 of Sakata) but fails to teach wherein the photodiodes are CMOS devices. However Applicant's admitted prior art teaches wherein CMOS devices are used as a photodiodes.

Therefore taking the combined teachings of Sakata, Takeuchi and Applicant's admitted prior art, it would be obvious to one skilled in the art at the time of the invention to have been motivated to have CMOS devices to be used as photodetectors in order to integrate image sensor and camera electronics onto a single chip, low power dissipation due to the inherently lower CMOS process voltage, and significantly-lower manufacturing costs.

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[Claim 15]

Sakata teaches wherein the means for adjusting white balance include signal processing circuitry capable of changing variable gain coefficients (col. 3 lines 44-48). Sakata also teaches that a photosensor is a photodiode (col. 1 lines 12-14). However Applicant's admitted prior art teaches wherein CMOS devices are used as a photodiodes.

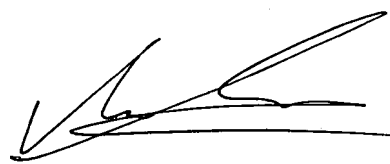
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yogesh K. Aggarwal whose telephone number is (571) 272-7360. The examiner can normally be reached on M-F 9:00AM-5:30PM.

8. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on (571)-272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

YKA



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